CLAIMS

1.   A moving image encoding method for encoding an inputted picture on a block-by-block basis after dividing the picture into blocks, the picture including luminance components and
5   chrominance components, said method comprising:

a prediction encoding step of encoding the picture by referring to an encoded area in the picture or a different encoded picture;

a reconstructed picture generation step of reconstructing the
10   picture using encoded data generated in said prediction encoding step; and

a deblocking step of reducing distortion by filtering a boundary between blocks of the reconstructed picture generated in said reconstructed picture generation step,
15   wherein in said deblocking step, filters are respectively applied to the luminance components and the chrominance components: a type of the filters is selected based on encoding information of each luminance component and the selected filter is applied to the luminance component; and a filter selected for a
20   luminance component, which belongs to a same field as a chrominance component and corresponds to the chrominance component, is applied to the chrominance component.

2.   The moving image encoding method according to Claim 1,
25   wherein in said deblocking step, strength of the filters differs depending on a type of the filters.

3.   The moving image encoding method according to Claim 1,
wherein in said deblocking step, in the case where
30   chrominance components of a picture to be encoded are decimated to a half amount in a direction vertical to luminance components, a vertical position of a pixel of a luminance component is determined

based on a pixel structure that results from dividing the picture into spaces of a top field and a bottom field even in the case where the picture is encoded on a frame-by-frame basis, the pixel of the luminance component being referred to for determining a type of a filter to be applied to the chrominance component.

4.   The moving image encoding method according to Claim 1, wherein in said deblocking step, in the case where chrominance components of a picture to be encoded are not decimated in a direction vertical to luminance components, a vertical position of a pixel of a luminance component is determined as a position same as a vertical position of the chrominance component, the pixel of the luminance component being referred to for determining a type of a filter to be applied to the chrominance component.

5.   A moving image decoding method for decoding encoded moving image data obtained by encoding, on a block-by-block basis, a picture which is divided into blocks, the picture including luminance components and chrominance components, said method comprising:
    a prediction decoding step of decoding the picture by referring to a decoded area in the picture or a different decoded picture; and
    a deblocking step of reducing distortion by filtering a boundary between blocks of the decoded picture generated in said prediction decoding step,
    wherein in said deblocking step, filters are respectively applied to the luminance components and the chrominance components: a type of the filters is selected based on encoding information of the luminance component and the selected filter is applied to each luminance component; and a filter selected for a

luminance component, which belongs to a same field as a chrominance component and corresponds to the chrominance component, is applied to the chrominance component.

5   6.   The moving image decoding method according to Claim 5, wherein in said deblocking step, strength of the filters differs depending on a type of the filters.

7.   The moving image decoding method according to Claim 5,
10   wherein in said deblocking step, in the case where encoded moving image data to be decoded is obtained by encoding of a picture from which chrominance components are decimated to a half amount in a direction vertical to the luminance components, a vertical position of a pixel of a luminance component is determined
15   based on a pixel structure that results from dividing the picture into spaces of a top field and a bottom field even in the case where the picture is decoded on a frame-by-frame basis, the pixel of the luminance component being referred to for determining a type of a filter to be applied to the chrominance component.
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8.   The moving image decoding method according to Claim 5, wherein in said deblocking step, in the case where encoded moving image data to be decoded is obtained by encoding of a picture from which chrominance components are not decimated in a
25   direction vertical to the luminance components, a vertical position of a pixel of a luminance component is determined as a position same as a vertical position of the chrominance component, the pixel of the luminance component being referred to for determining a type of a filter to be applied to the chrominance component.
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9.   A moving image encoding apparatus which encodes an inputted picture on a block-by-block basis after dividing the picture

into blocks, the picture including luminance components and chrominance components, said apparatus comprising:

a prediction encoding unit operable to encode the picture by referring to an encoded area in the picture or a different encoded picture;

a reconstructed picture generation unit operable to reconstruct the picture using encoded data generated by said prediction encoding unit; and

a deblocking unit operable to reduce distortion by filtering a boundary between blocks of the reconstructed picture generated by said reconstructed picture generation unit,

wherein said deblocking unit is operable to apply respective filters to the luminance components and the chrominance components: a type of the filters is selected based on encoding information of each luminance component and the selected filter is applied to the luminance component; and a filter selected for a luminance component, which belongs to a same field as the chrominance component and corresponds to the chrominance component, is applied to the chrominance component.

10. A moving image decoding apparatus which decodes an encoded moving image data obtained by encoding, on a block-by-block basis, a picture which is divided into blocks, the picture including luminance components and chrominance components, said apparatus comprising:

a prediction decoding unit operable to decode the picture by referring to a decoded area in the picture or a different decoded picture; and

a deblocking unit operable to reduce distortion by filtering a boundary between blocks of the decoded picture generated by said prediction decoding unit,

wherein said deblocking unit is operable to apply respective

filters to the luminance components and the chrominance components: a type of the filters is selected based on encoding information of the luminance component of each luminance component, and the selected filter is applied to the luminance

5 component; and a filter selected for a luminance component, which belongs to a same field as the chrominance component and corresponds to the chrominance component, is applied to the chrominance component.

10 11. A program for encoding a picture on a block-by-block basis after dividing the picture into blocks, the picture including luminance components and chrominance components, said program causing a computer to execute:

a prediction encoding step of encoding the picture by
15 referring to an encoded area in the picture or a different encoded picture;

a reconstructed picture generation step of reconstructing the picture using encoded data generated in said prediction encoding step; and

20 a deblocking step of reducing distortion by filtering a boundary between blocks of the reconstructed picture generated in said reconstructed picture generation step,

wherein in said deblocking step, filters are respectively applied to the luminance components and the chrominance
25 components: a type of the filters is selected based on encoding information of each luminance component and the selected filter is applied to the luminance component; and a filter selected for a luminance component, which belongs to a same field as a chrominance component and corresponds to the chrominance component, is applied to the chrominance component.

12. A program for decoding an encoded moving image data

obtained by encoding of a picture on a block-by-block basis after the picture is divided into blocks, the picture including luminance components and chrominance components, said program causing a computer to execute:

5   a prediction decoding step of decoding the picture by referring to a decoded area in the picture or a different decoded picture; and

a deblocking step of reducing distortion by filtering a boundary between blocks of the decoded picture generated in said

10   prediction decoding step,

wherein in said deblocking step, filters are respectively applied to the luminance components and the chrominance components: a type of the filters is selected based on encoding information of the luminance component and the selected filter is

15   applied to each luminance component; and a filter selected for a luminance component, which belongs to a same field as a chrominance component and corresponds to the chrominance component, is applied to the chrominance component.

20   13.   An integrated circuit in which an inputted picture is encoded on a block-by-block basis after being divided into blocks, the picture including luminance components and chrominance components, said integrated circuit comprising:

a prediction encoding unit operable to encode the picture by

25   referring to an encoded area in the picture or a different encoded picture;

a reconstructed picture generation unit operable to reconstruct the picture using encoded data generated by said prediction encoding unit; and

30   a deblocking unit operable to reduce distortion by filtering a boundary between blocks of the reconstructed picture generated by said reconstructed picture generation unit,

wherein said deblocking unit is operable to apply respective filters to the luminance components and the chrominance components: a type of the filters is selected based on encoding information of each luminance component and the selected filter is applied to the luminance component; and a filter selected for a luminance component, which belongs to a same field as the chrominance component and corresponds to the chrominance component, is applied to the chrominance component.

14.   An integrated circuit in which an encoded moving image data is decoded, the encoded moving image data being obtained by encoding of a picture on a block-by-block basis after the picture is divided into blocks, and the picture including luminance components and chrominance components, said integrated circuit comprising:

a prediction decoding unit operable to decode the picture by referring to a decoded area in the picture or a different decoded picture; and

a deblocking unit operable to reduce distortion by filtering a boundary between blocks of the decoded picture generated by said prediction decoding unit,

wherein said deblocking unit is operable to apply respective filters to the luminance components and the chrominance components: a type of the filters is selected based on encoding information of the luminance component of each luminance component, and the selected filter is applied to the luminance component; and a filter selected for a luminance component, which belongs to a same field as the chrominance component and corresponds to the chrominance component, is applied to the chrominance component.